Monograph

ON

Wire and Tinsel

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G M

MONOGRAPH

on the Manufacture of

WIRE AND TINSEL

IN THE

UNITED PROVINCES.

BY

C. W. GWYNNE, B.A., I.C.S.

ALLAHABAD:
PRINTED BY F. LUKER, SUPDT., GOVERNMENT PRESS, UNITED PROVINCES.
1910.

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State Museum Li
Lucknow

PREFACE.

THIS monograph has been written in accordance with G. O. no. 2021 of 1908. The books to which I am indebted will be sufficiently obvious from the text. I have made local enquiries in Benares, Agra Lucknow and Bareilly. I take this opportunity of thanking Messrs. Girdhar and Hari Das of Benares for much valuable help: also M. Chandrana Prasad of Benares and B. Davindra Nath, Librarian of the Carmichael Library, Benares. These gentlemen made my work much lighter by the readiness with which they put their knowledge at my disposal. The photographs have been taken by a photographer of the Government Press, Allahabad.

BENARES :
The 12*th December* 1909.

C. W. GWYNNE.

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A MONOGRAPH ON WIRE AND TINSEL.

Scope of the monograph.

BY wire and tinsel are meant gold and silver wire and the articles made from this wire, such as *kálábatun* (wire twisted with silk thread), *bádla, salma, sitára* (stars and spangles), gold and silver lace of various kinds in which category *gota* weaving and *tár* making are included, and also to some extent articles embroidered with various kinds of wire (*zardozí* work) studded with them (*kámdání*) and woven with them (*kamkhwáb*). I propose in this monograph to deal almost exclusively with the mechanical and artistic sides of these industries: and shall describe in some detail the processes of manufacture from the first stage of handing a solid bar of metal to the *kandilakash* to the final stage in which the wire is of the requisite form and fineness and can by slight but cunning transformation be used to prepare the rich and beautiful embroideries and brocades for which Northern India was once so justly famous.

Brief history.

The art or manufacture of gold and silver embroideries and of gold and silver wire drawing is of great antiquity. It is of eastern origin and has long flourished in India, China, Asia Minor and Arabia. India is doubtless its home, but there is none but indirect and literary evidence for this statement. In Vedic and Puranic literature there are many references to gold and silver embroidery, and much later Pliny tells us that the weaving of silk with gold was the invention of an Asiatic king, Attalus. The actual origin of the art is, however, shrouded in mystery, and indeed is not of vast importance. Probably Benares, as a great religious centre, was from earliest times the chief home of the industry. Wealthy pilgrims were attracted there from all parts of India who would gladly buy silk garments made richer and more beautiful by gold and silver embroidery, for silk is sacred to the Hindu and is suitable for praying garments. Hence in the days before authentic history begins, and later during the subsequent revival of Hinduism, Benares would be a profitable field of operation for the worker in gold wire.

But this is mere speculation. The actual importance of this industry may be said to begin with the Muhammadan conquest and occupation of Northern India. The remarkable feature of it is that it seems suddenly to have passed into the hands of Muhammadans.

Whether it is that the Hindu workers were converted to Islam by force or by self-interest is not apparently known. But it seems probable that during Muhammadan invasions the best artisans were often deported for the service of the victor's court and conversely when Mogul rule was firmly established in India, the great cities of Central Asia and Persia may have sent their skilled artisans to India. In Mogul times the manufacture of silks and brocades for the sultans, nobles and their wives was general at every court. Muhammad Tuglak in the fourteenth century kept at Dehli 500 weavers to make the gold brocades worn by his wives or distributed as royal presents with a generous hand. Akbar, however, first introduced the manufacture of brocades on a large scale and it is on record (Akbar's Acts, section 32) that he paid much attention to *zardozí*, *kálábatun*, *qashidah*, and *qalghai*, all stuffs in which gold and silver threads are used. Dehli, Agra and Lucknow were formerly the chief centres of this work, deriving their importance from the patronage of the various Mussalman courts. This is not the place to dwell on the beauty or rather elegance of the brocades and embroideries which used to adorn the palaces and persons of the princes and gentlemen of India. It is sufficient to say that gold and silver embroidered articles of dress were in almost universal use of a fine sort for the wealthy, and of an inferior sort for the poor. Such stuffs are still in great demand at marriages and are widely used by women even among the primitive tribes of Kuchi and Kathiawar.

Decline of the industry.

No more than a quarter of a century ago, to judge by Dr. Hoey's monograph on the industries of Northern India, gold and silver wire work in various forms was a most flourishing industry in Northern India, in these provinces, and particularly in Lucknow.

But at the present time, in the United Provinces at any rate, this cannot be said to be the case. There is a decline both in output and in quality. The chief centres are Benares, Lucknow, Agra and Bareilly. But to-day there cannot be more than twelve or fifteen hundred men employed in gold and silver wire work in these four centres, whereas a generation ago there are said to have been two thousand five hundred in Benares alone. And there is not only a decline in the actual output but also in the quality of the work done, since there is a tendency to forget the purely Oriental features of the art, and to consult European taste, and to copy European designs.

Causes of the decline.

I have talked to the leading merchants of Benares and Agra, and they attribute this two-fold decline to the following causes:—Firstly, the use of gold thread imported from Lyons, the retail price of which is a little less than that of the hand-made article here. Although it contains less gold its appearance is equally as good, and its use is expanding very fast. The artisans themselves know this only too well, and sometimes in the course of my enquiries I met with some opposition from the workers who were unwilling to show me their methods of work, fearing that this interest was merely the prelude to the introduction of machinery, and the consequent loss of their means of livelihood. Secondly, the use of inferior *kálábatun* smoked over *bhusa* and then coloured as at Bareilly or made of German silver and imitation silver, as in all the centres of the industry. In point of fact I do not think this is very serious, since the use of inferior wire is necessary to meet the fairly wide demand among the poorer classes for various kinds of embroidery. Even if in other respects the industry were at its height there might still be a demand for such inferior articles. If, of course, the inferior *kálabátun* were used in the manufacture of the best embroideries and brocades now produced, there would be an obvious reason for a fall in demand. But this does not appear to be the case, as the leading manufacturers show a considerable pride in the quality both of the material used and of the work done. Far more serious is a third cause, namely, production by the manufacturers for a different market combined with the growth of European fashion among Indians of education. Formerly these articles were produced for and sold to the wealthy rajas and gentlemen of India, and were indigenous, both in style and manufacture. But to-day the European visitor is the more considered purchaser: designs to please his eye and a style of production to please his taste have been adopted by many of the leading merchants of the provinces. For example, in the *zardozí* work produced in Agra the use of *sitára*, stars in gold and silver, has been discarded as being unpleasing to European fancy. It is true that in Benares in the *kamkhwáb* work some effort is being made to reproduce the older and indigenous designs, the Maharaja having allowed some fine pieces of old brocade to be copied. Still, even so, the taste of the European is considered first. Moreover the rapid spread of European fashions in India has greatly diminished the demand amongst Indians of wealth for gold and silver embroidery and the like and has in a measure vitiated the quality of that demand, inasmuch as it tends to be for the same class of product as pleases the European. This, however, is not universal. There are two classes of producers: There is the big merchant who consults his clientêle of rich Indians and travelling Europeans. There is also the smaller merchant who deals in articles of less costliness with Indian purchasers of humble means. With the first class a fall in demand is also combined with a decline in artistic quality. But with the second there is decline neither in quality nor in demand, but the number of Indian workers actually employed has decreased, owing to the growing use of machine-made imported wire.

It must be noted, however, that the gold wire and *kálábatun* used in the production of what is to-day the best work of its kind is not as a rule of an inferior and counterfeit quality. Such materials are used for the most part by the smaller manufacturers who consider the Indian of smaller means. Articles produced by such manufacturers are widely patronized by the humbler classes, *dupattas* for marriage garments, *topis*, shoes, and even harness for ekka ponies being sold in large quantities. Skeins of *gota* are seen hanging in every bazar, and at every mela the craft of the wire worker in one form or another is conspicuously represented. The leading manufacturers of *zardozí* and *kamkhwáb*, however, do not as a rule fall back upon the use of inferior articles. They, at any rate, use real gold and silver, even though it be imported, and they have to the full the pride of the cunning craftsman in the excellence of his work. Considered therefore in the light of the spread of Western fashion, the use of inferior material is rather a result than a cause of the decline in the industry, and would not be so forcibly brought to notice were the production of embroideries and other gold stuffs on the same scale as formerly.

Present state of the industry.

Although there has been a marked decline in recent years, a considerable amount of work is still done, and doubtless, if the remedies suggested by Mr. Chatterji in his Notes on the Industries of the United Provinces, pages 50 and 51, are adopted, the ground now lost may be recovered. Excluding the men who use *kálábatun* for silk cloth weaving, the number of hands engaged in the manufacture of wire and tinsel, including gold and silver lace, must be five hundred to six hundred in Benares, two hundred to three hundred in Lucknow, one hundred to one hundred and fifty in Agra and about the same number in Bareilly. A large quantity is also imported from Delhi, which is on our borders. A large number of caps are also embroidered at Meerut and at Amroha in the district of Moradabad. A little work is also done at Karra in the district of Allahabad.

Allied trades to be described.

The wire and tinsel work and allied trades which I propose to describe in this monograph fall into three natural divisions —

(i) Those in which the wire itself is produced.
(ii) Those in which the wire is changed so as to be used not as wire but in some other form.
(iii) Those in which the products of (i) and (ii) are used for weaving, embroidery and brocade.

These classes of the trades, sub-divided and enumerated, are as follows :—

I. The production of wire.

(1) *Kandilakashi*, i.e., first the beating out of a bar of silver, or of silver coated with gold leaf, and afterwards the pulling of it into thick wire.
(2) *Tárkashi*, i.e., the process of lengthening out the thick wire into very thin wire or thread, the thinness being determined by the use to which the wire is to be put.
(3) *Tárdabkána*, i.e., beating out this thin round wire till it is flat, to produce what is known as *bádla*, a kind of wonderfully fine gold or silver ribbon.

II. The transformation of wire.

(4) *Kálábatun* making, i.e., twisting gold and silver wire round silk thread. It is used in weaving brocades and is somewhat like *zardozí* work.
(5) *Salma* and *sitára* making, i.e., giving the wire a special form (*salma*), or beating each coil of this specially formed wire into the shape of a star or spangle (*sitára*). These are used in *zardozí* work.

III. The uses of wire.

(6) The weaving of *gota* and *lais*, used for embroidery and making garlands.
(7) *Kámdání* work or embroidery of silk, satin or cotton with gold wire (*bádla*). In this work no silk thread is used to sew on the wire, but it is driven straight through the silk and beaten flat on the other side, so that there is no right or wrong side to these articles.
(8) *Zardozí* work or embroidery of silk, satin or velvet with *bádla*, *salma* and *sitára*. In this work *salma* and *sitára* are sewn on by the *darzi* with silk thread.

(9) *Kamkhwáb* work or brocades woven of *kálábatun* and silk. In *zardozí* and *kámdání* work the pattern is impressed on the silk or whatever the ground may consist of, and is then worked out by hand. In *kamkhwáb* the pattern is produced by weaving, just as in the weaving of carpets. This industry, for which Benares is justly famous, only falls within the purview of this monograph to a slight extent.

Independence but also inter-dependence of these Industries.

It must not be supposed that each of these branches is in itself an absolutely separate industry. Wire pulling and beating at any rate are rather the preliminary stages of *zardozi* and *kamkhwáb*. But at the same time a most careful sub-division of labour is observed, and a different kind of skill is required in each stage. The big brocade or embroidery merchant is the ultimate controlling force. But he does not employ men to work exclusively for him, as artisans are employed in England. He does not have under his own control a special department for wire pulling, another for wire beating and so on. He does not supply the workshops nor does he supply the tools. He simply gives out the metal to a few artisans, who return it to him in the form required, but who are otherwise quite independent of him. The workmen work in their own homes for the most part, generally a single room, in a state of semi-decay, as is evident from the illustrations. They provide their own tools, which are most extraordinarily simple, and are paid by piece-work, not as employés, but as producers, earning a few annas a day for their wire pulling, beating, and weaving, as the case may be. On the other hand a master workman will often employ several artisans under himself—especially in the case of *kandilakashi* where one man cannot by himself do the work. And sometimes it happens that two or three branches of the industry are combined in one business; for example, in Benares some men buy the thick wire from the *kandilakashi* and sell it in the form of *kálábatun*, i.e., they turn the thick wire into the thin wire (*tár*) and then get it twisted with silk to produce *kálábatun*. But even here the same workmen do not, so far as I know, do both these kinds of work. Thus each of these trades is to some extent independent of the others but they are all controlled by the embroidery merchants to whom primarily the demand comes, and who cause the supply to be produced.

Centres of the Industries.

In the United Provinces the chief centres of these industries are in order of their importance: Benares, Lucknow, Agra and Bareilly.

Each of these centres has certain features peculiar to itself. These I propose briefly to describe.

Benares.

In Benares the chief work done is the manufacture of *kálábatun*, which is in great demand for *kamkhwáb* weaving, the industry for which *par excellence* Benares is famous. But there is also a large amount of *zardozí* work of considerable merit, both in execution and design. Hence wire work in all its forms is carried on here, and is of the best quality. The *salma*, for example, produced in Benares is used even by the Agra merchants, who prefer it to the *salma* locally produced in Agra. It is said that the *salma* of Benares was second to none produced in India. In Benares, too, by far the largest number of workmen are employed. They are mainly *julahas*, but in the earlier stages of the work, which require a certain degree of physical strength, the ranks of the workmen are recruited from all the artisan castes: and in the lighter forms of wire work, such as *salma* making, many *pardah* women of respectability are driven by humble means to find employment. As to the question of wages I shall deal later on as I treat individually of each branch of minor work: but it must always be borne in mind that often all the members of a family will be employed in one or other of the various branches, and that, therefore, it is difficult to calculate the exact scale of pay.

Lucknow.

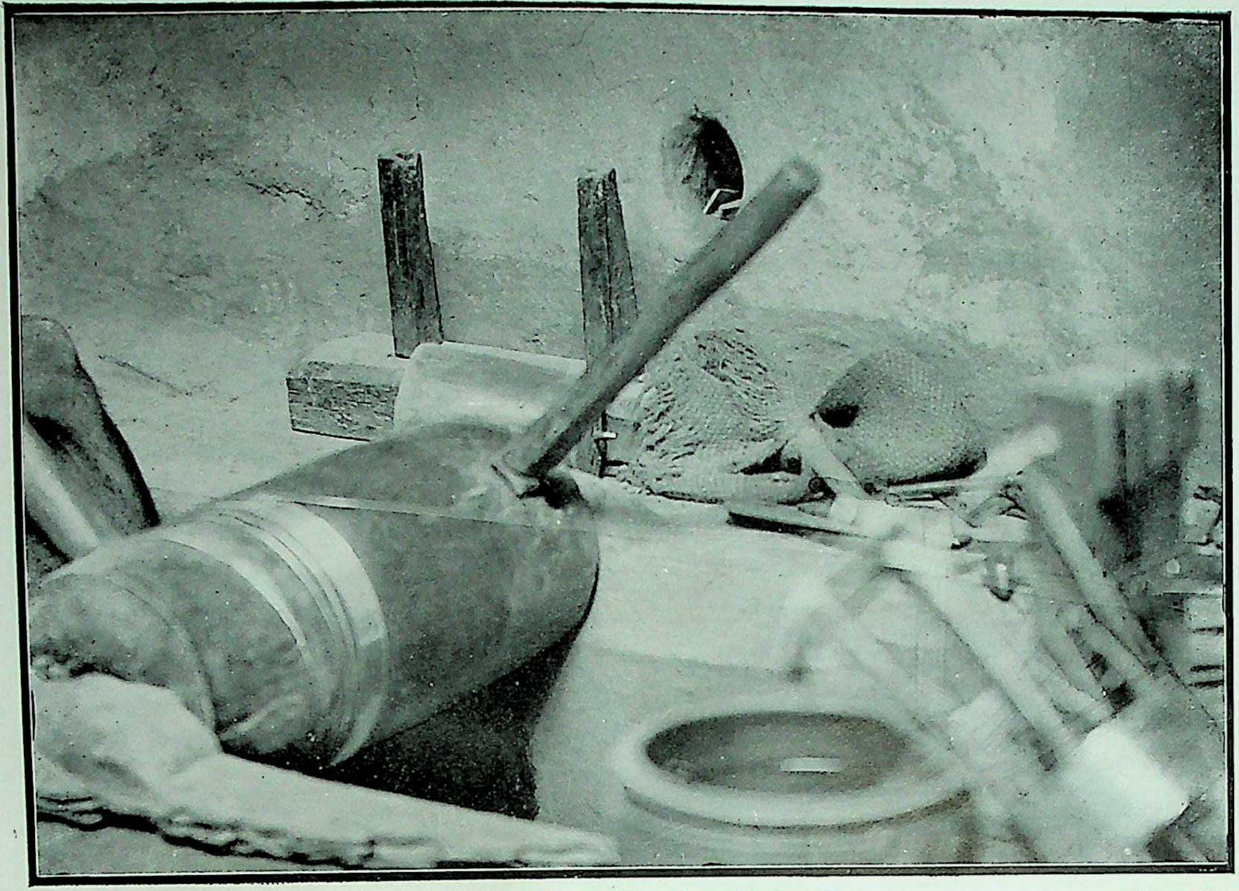
Zardozí work is done in Lucknow, but none that can compare with the beautiful brocades and embroideries of Benares. Lucknow is chiefly and justly famous for its lace work, for which there is still a wide demand. Formerly it was one of the staple industries of Lucknow. In this city, too, indications are not wanting of the former importance of the wire industry. It seems to have been highly organized. Dr. Hoey in his monograph describes the "*kandila kachahri*," an institution in the chauk like a mint, maintained by the *gotawalas* (the gold and silver lace dealers) in a body, and superintended by a darogha, paid and appointed by them. Silver was there melted down and cast into *kandilas* of uniform size which the *kandilakash* took to his workshop and pulled. All issues of metal were recorded, and all metal thus passed out was held to be absolutely pure. The institution still exists, but as far as I can ascertain is not called a '*kachahri*.'

Agra.

In Agra some very beautiful *zardozí* work is to be seen of the same class of excellence as that produced in Benares, but less indigenous in pattern and conception. The leading merchant there told me he never used '*sitára*' in his *zardozi* work, as he found it was not much appreciated by his European customers. For the reason given above *salma* too is not produced on anything approaching a large scale. But there is a considerable amount of lace work and the manufacture of *kálábatun* is not unknown, although no *kamkhwáb* weaving is done.

Bareilly.

Bareilly is unlike Agra and Benares, in that there the demand is chiefly for the inferior quality of articles and is chiefly limited to Indian inhabitants of the immediate locality. A large amount of *gota* is produced there, but no *kamkhwáb* and little *zardozi* with the exception of cap embroidery and trimming for the coats worn by prostitutes and children. There is a considerable amount of *kámdáni* work, especially in the manufacture of *dupattas* and the like. But Bareilly is chiefly famous for the counterfeit wire there produced, '*naqli tár*' as it is called. The process is very simple and is as follows :—A quantity of *bhusa* is lighted, from which a thick smoke arises. Over this the fine silver wires are held, the workman taking a bundle of *bádla* done into skein. Mr. Charles in his monograph on gold and silver work says that a sieve-like instrument is used and that the wire is spread over this. But I did not see any instrument of this description used. The workman with his own hand held the wire over the *bhusa* smoke. After the wire has thus been warmed in the smoke, powdered *haldi* and *roli* are sprinkled over it. *Haldi*, i.e. turmeric, is the ordinary yellow coloured spice used in curry, and *roli* is *haldi* wetted in lemon juice with borax and alum and then dried. It is then ground up and becomes a deep red powder. After sprinkling the wire with this powder the artisan draws his hand once or twice sharply over the skein of wire in order to rub the powder well over it, and then holds the wire thus treated again over the *bhusa* smoke. The wire becomes gold coloured. It is easily distinguishable from the genuine gold wire, as it is of a much brighter appearance and has the well-known look of imitation gold. It only keeps its freshness a little while, and then quickly tarnishes, but it is widely used for the manufacture of the cheaper kinds of *gota*. The wages earned from this work are very small, for it is purely mechanical labour. As an occupation it is not enviable as the *bhusa* smoke is most trying to the eyes of the maker, who in consequence can only work a short time daily. I will now turn to the wire-pulling and allied trades above enumerated and will describe the processes of manufacture in some detail.



Apparatus of the Kandilakash. (*Page*, 9)

Production of wire: kandilakashi.

1. *Kandilakashi* wire is made from solid silver or silver mounted by gold plate. There is no such thing as pure gold wire, as gold is neither sufficiently malleable nor ductile for this purpose. The silver is melted first over a fire and is then poured into an iron vessel called *parghani*, a kind of thin mould about a cubit in length. In this the metal solidifies and becomes a bar or *kandila* of silver. This lengthwise shape of the metal is also called a *pása* and a *gulli*. Each *kandila* ordinarily weighs 50 *tolas*, but sometimes the weight is 40, sometimes 60 *tolas*. The *kandilakash* having obtained the *kandila* beats it at the ends to make them fine enough to penetrate the *jantari*: and then draws it through a succession of holes in an iron plate, each hole being smaller than the last one, till finally he produces a long wire of about one-twelfth of an inch in thickness. This iron plate is called a *jantari* (जन्तरी) and the name of the thick wire thus produced is *guchhli*, which is prepared in lengths of ten or twelve yards. The weight of this wire is one *másha* for half a yard, i.e., at the rate of 12 *máshas* per *tola*, 600 *máshas* for one *kandila*, or 300 yards of wire. Thus from each *kandila* about 25 or 30 lengths of *guchhli* are produced.

The appliances for this kind of wire-pulling are very simple. In the floor of the workshop a hole is dug about four feet long, two feet broad and three feet deep. In the centre of this a wooden axle with spokes but no hub (called a *charkha*) is fixed and a heavy iron chain is attached to one of the spokes. At the other end of the chain is a clamp (*zambur*) and to this one end of the *kandila* is attached. At one side of the hole in the ground opposite the axle two wooden uprights are firmly fixed (*monna*) and on the far side of these the *jantaris* are fixed. The *kandila* is beaten thin at one end and is thus fitted into the *jantari*: is caught by the clamp, the axle is then turned round by hand and the bar pulled through the perforated iron plate. The *kandila* is waxed to make it slip through more easily and is sometimes dipped in water, and sometimes too returned to the furnace. In this work two men are required and considerable physical strength is necessary. The *kandila* is drawn through 26 or 30 *jantaris* and in each *jantari* there are many perforations. In one day's work of about eight or nine hours one *kandila* is converted into *guchhli* or the thick wire that is handed on to the *tárkash*. In an ordinary workshop there are about eight artisans, so that four bars may be done in a day.

Gold wire.

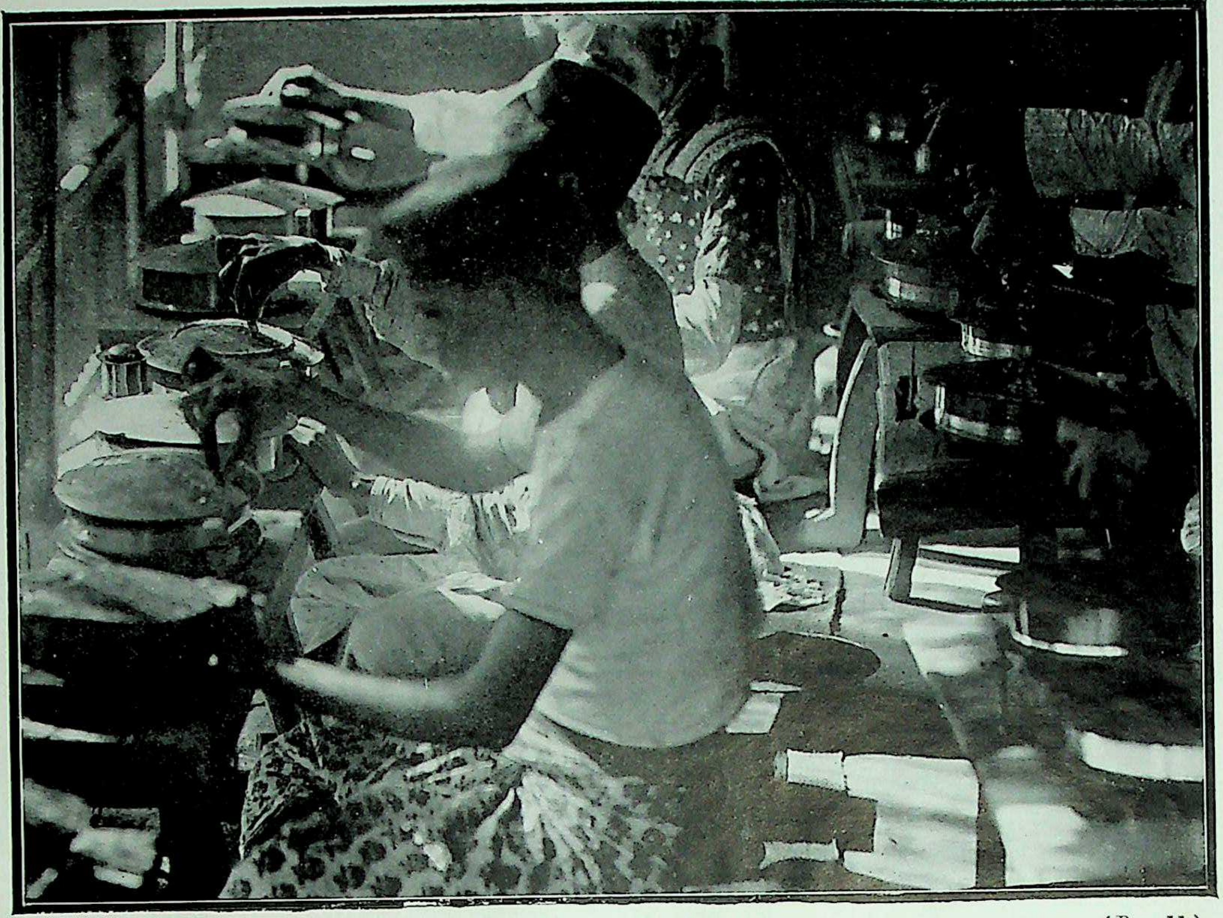
So far I have spoken only of silver wire, the *kandila* being known as the *safed* or *rupahli kandila*. There is, however, the gold wire made from the *sonahli* or *lal kandila*. This gold wire is made of silver with a coating of gold. The gold metal used in these provinces is for the most part imported from Bombay or America. But in Benares, gold is also provided locally by melting down 'guineas' and separating the alloy from the pure metal. Gold thus produced is called *panna* and it costs Rs. 3 per *tola* more than the gold of a guinea, owing to the expulsion of the alloy. Dr. Hoey says in his monograph that "if gold is added it is done by placing it at the plate and it adheres to the *kandila* as it is drawn through." But a different practice is more common, and I have never seen this method. Gold leaf (*sona patra*) is folded round the *kandila* of silver, being fastened on to it by thin rims of iron. It is made red hot in the furnace and by rubbing the gold and silver become fused. The bar thus treated is then given to a workman, who polishes the gold with agate, holding the bar with a clamp on to an iron slab. It is then heated once or twice more, and again polished. Before being passed through the *jantari* it is carefully rubbed with wax. Another method, but one not so efficient, is also employed sometimes. The leaf of gold is placed over the flat plate of silver, the edges of the silver plate projecting beyond the gold leaf placed on top. Fire is then applied to the margins, and the drugs are rubbed in. The gold leaf will then become fused with the silver plate. When the drugs exude it is a sign that the process is complete. The same process is sometimes adopted with rounded pieces of silver.

Proportion of gold and silver.

The wire produced has an entirely golden surface. The proportion of gold and silver is usually as follows:—With a *kandila* of silver, i.e., 50 *tolas* 8 *rattis* (or 1 *másha*) of gold are mixed. Thus the proportion of gold to silver is about one of gold to 600 of silver. From 50 rupees' worth of silver and 8 *rattis* of gold some 300 yards of thick gold wire are produced. It must be remembered that the rate of weights and measures is not uniform. In Benares, for instance, a rupee is considered to weigh only 10 *máshas*, or five-sixths of a *tola*; generally a rupee is held to be 1 *tola* in weight. Even so it is most extraordinary that with so small a percentage of gold this wire has the appearance of being gold throughout.

Wages.

The average rate of wages paid to the *kandilakash* is three pice per *tola* for gold wire and two pice per *tola* for silver wire. By a day's



The Tarkash at work. (*Page* 11.)

work of ten hours one *kandila* can be pulled : a *kandila* weighs about 50 *tolas ;* the amount therefore that it is possible to earn at this kind of work is very fair. But more commonly a master workman employs artisans who receive some three annas a day for their labour. The profit he makes is about Re. 1-12-0 on the *sonahli kandila*, and Re. 1-2-0 on the *ropahli kandila,* reckoning for each *kandila* two workmen at three annas per day, charcoal at four annas per day, and a small percentage for wastage. The profits are therefore fairly good, but compared with the profits made by the embroidery merchants are comparatively small, something like 3 per cent. compared with 8 to 12 per cent.

Tarkashi.

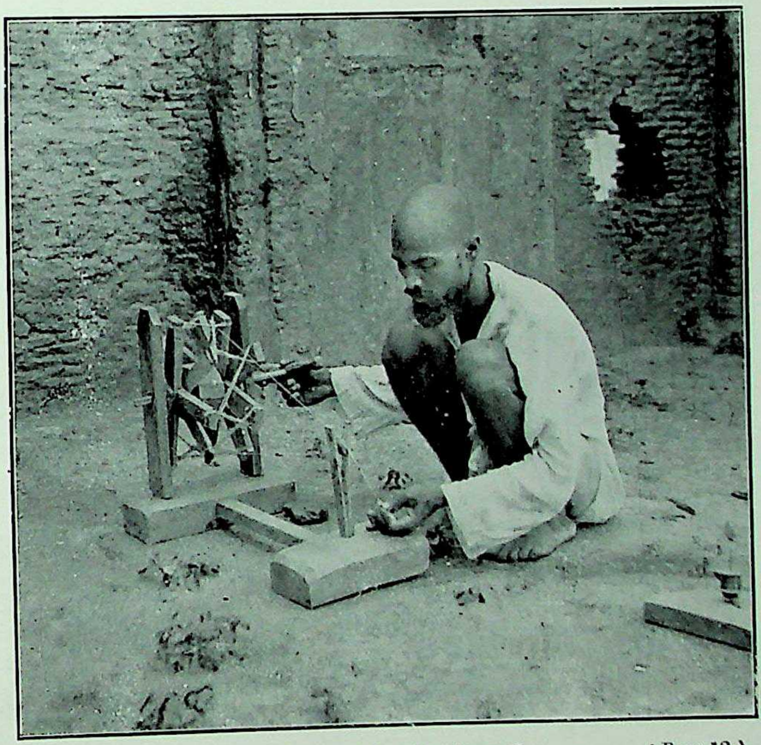
The second stage is the conversion of *guchhli* into very thin wire, sometimes even of the thinness of silk. This work is called *tárkashi* and the workman who does it is the *tárkash.* The length of *guchhli* some 10 or 12 yards is sometimes pulled to 100 yards. The shop of the *tárkash* is quite separate from that of the *kandilakash* and the work is much lighter and can be easily done by old men who are unfit for harder tasks. The process is quite simple. The *tárkash* has a low wooden bench in front of him on which are two reels called *charkh,* made of wood, one of which is larger than the other. He winds off the wire from the larger reel to the smaller one, turning the reel by hand but with the help of a small piece of wood or iron, lightly applied to the top of the *charkh.* As the wire is wound from one reel on to the other it passes through a finely perforated iron plate or *jantari.* But in Benares the *jantari* has to a large extent been replaced by an appliance called a *bára.* Midway between the two *charkhs* (and it should be mentioned that the distance between them is usually about four spans) a piece of iron is fixed and in this is adjusted the *bára* through which the wire is drawn. The *bára* is a round brass thing of the shape and size of a pice, with a single hole in the middle. It is of English invention and has only been used in India for a few years. It is claimed for it that its introduction has made *tárkashi* work easier, and that it has this great advantage over the *jantari* that the hole in it does not expand, whereas the perforations of the *jantari* after some use become too big for the production of the thin wire required. But under no circumstances is the work hard. The main difficulty to contend with is the snapping of the wire, as joining it up again is not an easy matter. The wire when it leaves the *tárkash* is always round like thread and of about the same fineness. It must be noted that silver wire can be pulled much finer than gold. When both are so fine it is difficult to show this by actual measurements. But the wages for pulling the thinnest gold wire, and also the thinnest silver wire, are 4 annas per *tola.* But silver pulled to the fineness of the thinnest gold wire is paid at the rate of 2 annas per *tola.* The rate of pay depends entirely on the thinness of the wire pulled, the thinner the wire, the higher being the rate of pay. Four annas per day has been stated to be the maximum wage for the thinnest wire. The rate for the thickest gold wire is one anna per *tola,* and for the thickest silver wire is 3 pice per *tola.* The thicker wire is used chiefly for *gota* weaving, and the thin wire for the making of *kálábatun.* Of the former some 5 *tolas* a day can be pulled, and of the latter some 50 *tolas* in three days. The relation between the potential and the actual I cannot give. The rate of pay in this branch has declined considerably. Some years ago it was possible to earn about three times as much per *tola* as it is to-day.

Badla making.

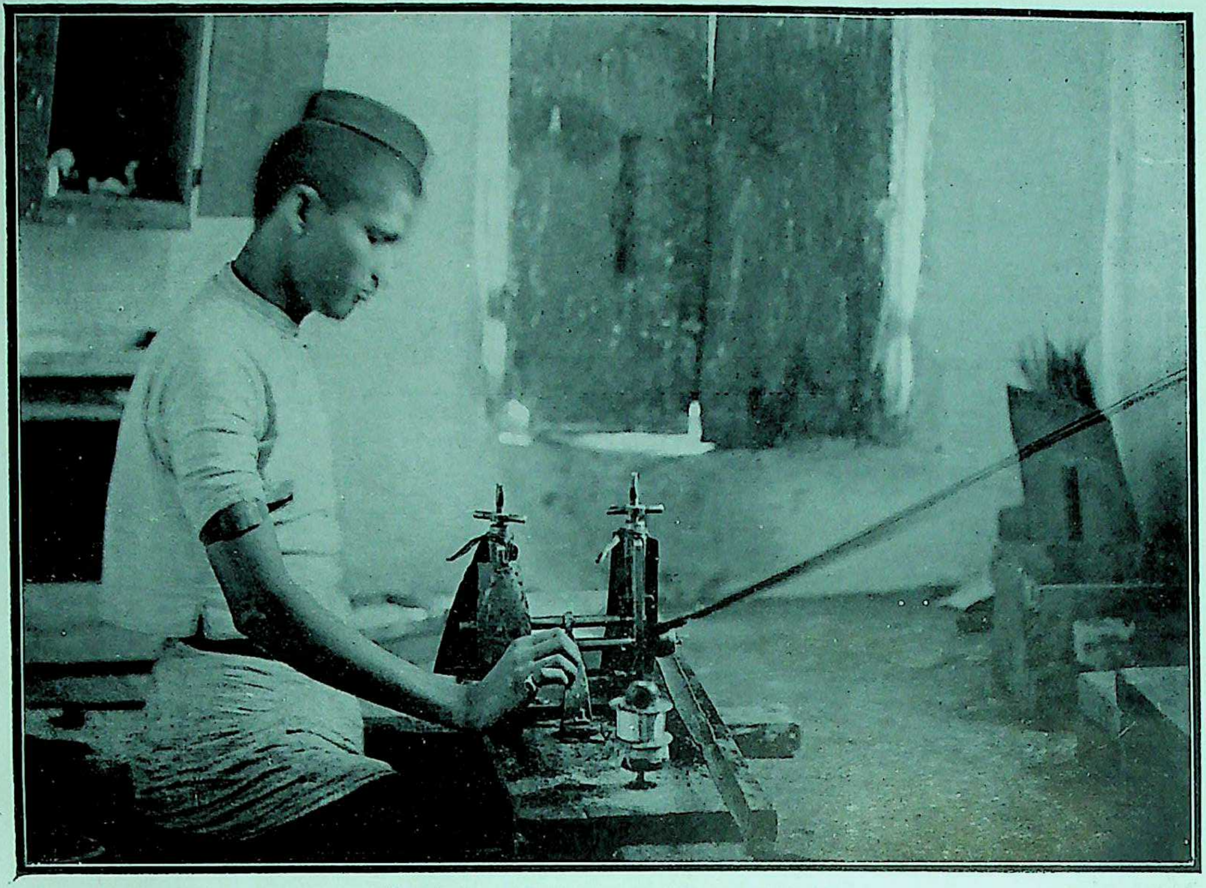
After the wire leaves the *tárkash* it passes through a third stage in which the round wire is converted into flat wire of varied thickness and width. It looks like very fine ribbon. The work is called *tárdabkána,* and the workman the *tárdabkáya, dabkáya* and also the *chapariya.* The wires are reeled on to a machine called a *másha,* a machine exactly like a *charkh* but small in size. The *másha* is fixed on to a piece of wood. Generally speaking more than one *másha,* and not more than sixteen are attached to this board at one time. Each *másha* of course contains a separate skein of wire wound round it. From the *másha* the several wires are drawn through an upright piece of iron fixed into the ground called a *chhip,* or through a piece of cloth, the object being in each case to prevent the wire catching or breaking on the wood. After passing through this the wires are drawn on to a kind of anvil and beaten altogether with a hammer till they are flat. The anvil is a solid block of wood, semi-circular in shape, firmly fixed in the ground, on which a finely polished plate of steel is fastened. On this plate of steel the wire is hammered till it is flat. The anvil is called a *kunda,* the steel plate a *nehai* and the hammer a *hatura.* The wire thus flattened is called *dabka huá tár* or *kámdání ká tár.*

Kinds of flat wire.

There are several kinds of this differing in name according to their thickness. Thus there are (1) *Bádla* or *kinári bádla,* (2) *Kámdáni ka tár,* (3) *Mukhaish* and (4) *Batun. Mukhaish* and *kámdání ká tár* are thicker and wider than *kinári bádla,* which again is wider than *batun* and in a *tola* there are fewer yards. The work too is coarser. To produce



Badla work: by hand. (*Page* 12.)



Badla making : machine method. (*Page* 13.)

Modification of apparatus.

kinári bádla and *batun* also the apparatus above described is somewhat modified, though the principle remains the same. The wire is fixed on a nail in a *patiya*, i.e., a small pin of iron attached to pieces of wood, and then as before passed through the *chhip*. But it is also passed through a '*phanni*,' an instrument like a *jantari*, but made of fish bone so that the wire may not be moved in any way by the pressure upon it by the iron of the *jantari*. The wires are then placed flat on an anvil and beaten with a hammer called a *dhekhli*. This hammer is attached to a clamp, and it has a large flat surface, almost the size of the *nehai* itself upon which it falls, the *nehai* being the steel plate on the anvil. The object of this elaborate care is to turn out wire absolutely smooth. This process is entirely done by hand and is laborious. But both in Agra and Benares a machine for flattening wire is sometimes used, having been introduced from Ahmedabad. The machine is of a simple nature. It consists of a large wheel turned by hand. This by means of leather belting sets in motion two metal cylinders through which the wire passes, being drawn off on a reel. The pressure of these flattens the wire. This method of work is much quicker and much less laborious than the hand method. But it is said that the 'flat' wire thus turned out is not so good as that made by hand.

Machine method.

Apparently it is not so accurately smooth but to the eye at any rate it attains to quite the same excellence of quality. The difference in the width of '*bádla*,' a term often used generally for all kinds of thin flat wire, is not very noticeable to the uninitiated, but to the weaver and the embroidery worker it has a real significance. *Kinári bádla* is used for *gota* weaving, and the other kinds of *bádla* are used by the *zardozí* worker, while '*batun*,' the least in width of all kinds of *bádla*, is intertwined with silk to make *kálábatun*. The rate of wages differs according to the breadth of the '*bádla*' turned out. Wages for '*batun*' are paid at the rate of seven pice per *tola*, and wages for *kinári bádla* for *gota* weaving at the rate of only two pice per *tola*.

Wages.

There are also other forms of flat wire not strictly '*bádla*', and not used exclusively for embroidery, but still beaten and flattened in the same way.

Other kinds of flat wire.

Gokhru is made of two flat wires, twisted over one another, and bent at intervals to give the appearance of the thorny seeds of the *gokhru* plant. It is used for making raised flowers on brocades.

Diwali or *Tarang* or *Churi ká patti.*—It is known by all these names: is a broad wire about one-fourth to half an inch wide and is used for making bangles to be worn on the wrist: hence the name *churi.*

Tehra Tár is a kind of scolloped shaped *bádla* thus 〰〰〰 made from *Kora salma*, which will be described later, by beating. It is used in embroidering caps.

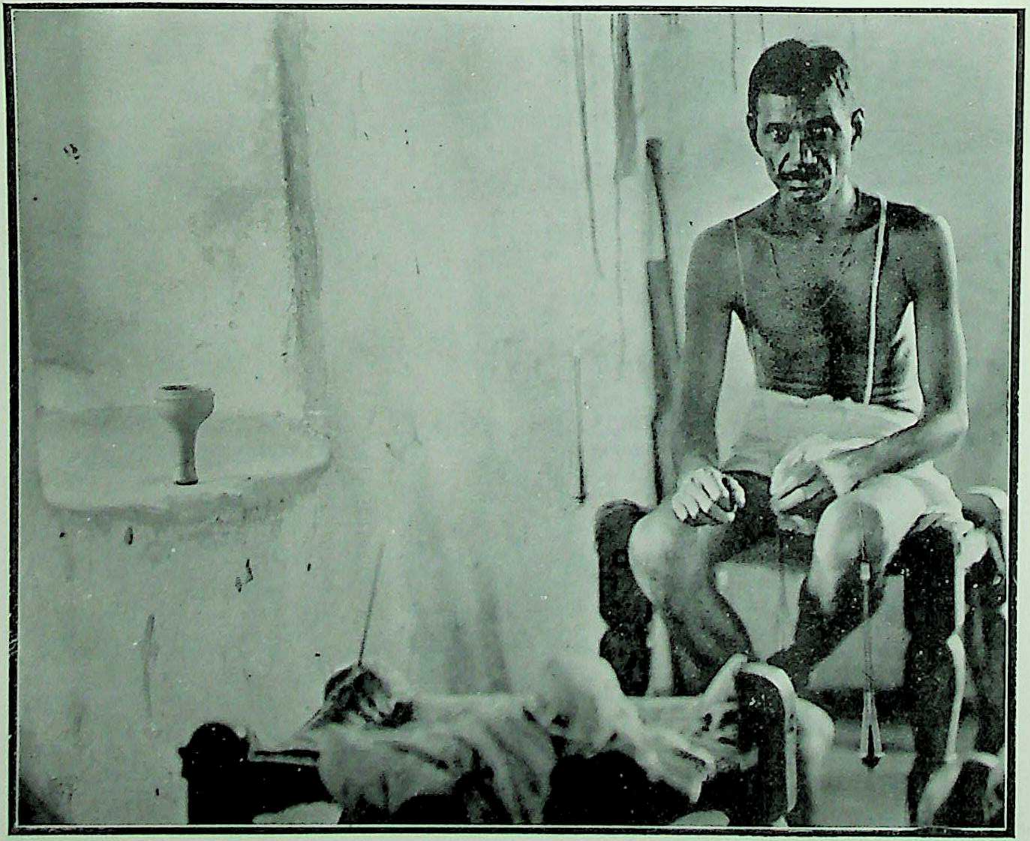
Transformation of wire. Kalabatun.

I now pass to the second main sub-division of this monograph from the production of wire, pure and simple, to describe the further processes necessary before the weaver and the embroidery worker is fully equipped for his art. This includes *kálábatun* making and *salma* and *sitára* making. The next stage in order is the manufacture of *kálábatun,* the gold thread used in all classes of *kamkhwáb* and *zardozí* work. It is simply the thin gold wire described above and known as *batun*, twisted with silk. For silver *kálábatun* silver wire and white silk thread are used: this is *rupa* or *rupahli kálábatun* and gold *kálábatun, sona* or *sonahli kálábatun*, is made of gold wire: 'gold' being used in the technical sense above mentioned, and yellow silk thread. The process of manufacture is very simple. When done by hand practically no tools are required, very little skill, and no physical strength. If done by machinery, as sometimes it is, especially in Benares, it is again perfectly simple, and may be left in the hands of young boys.

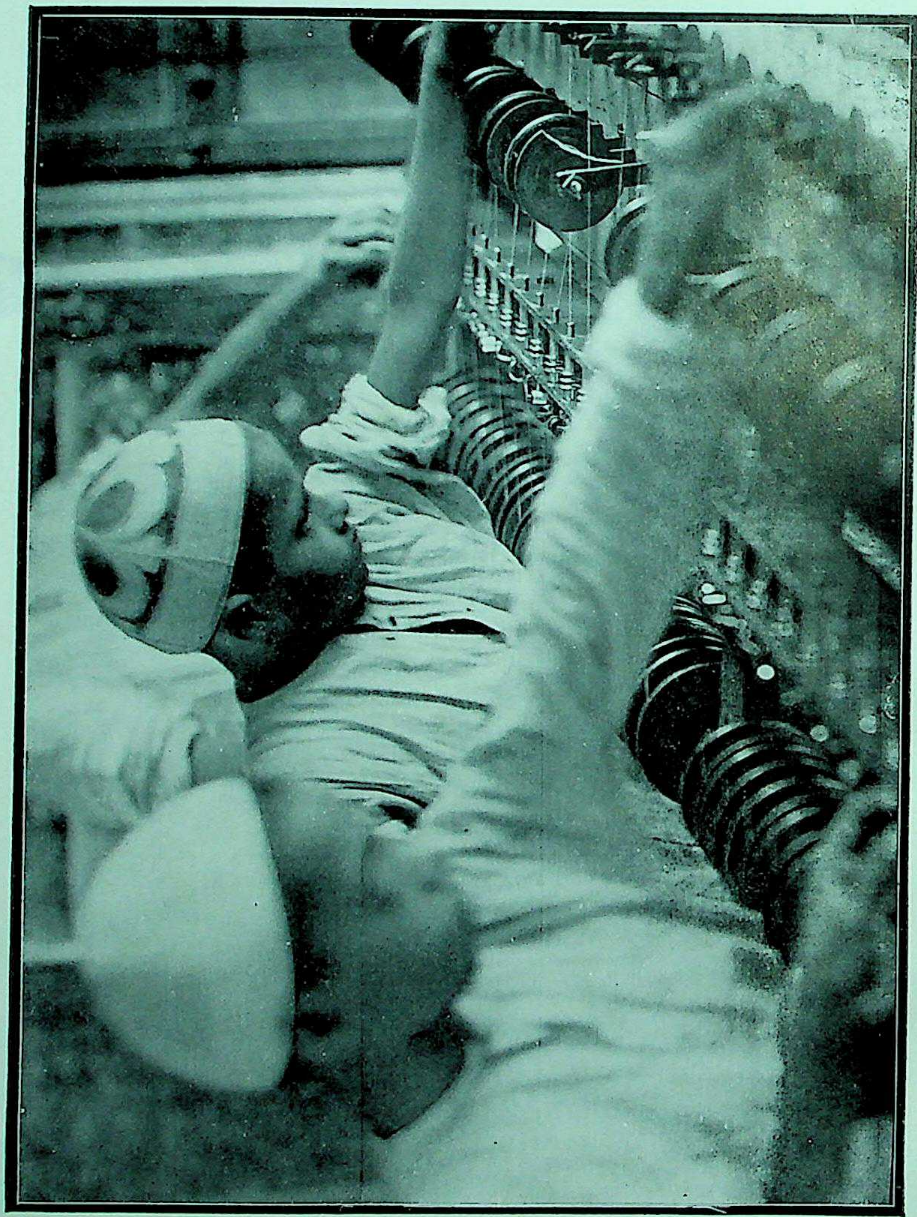
Hand production.

As done by hand it is as follows :—

Two *tekuris* or spools, an iron ring, and an earthenware pot are the apparatus required. The workman sits on the ground with an earthen pot containing '*batun*' beside him. On one of the *tekuris* silk thread, measuring about five hundred or six hundred yards, is wound. One end of this thread is passed through an iron ring or anything round attached to the ceiling of the workshop, or to something about two yards above the *tekuri.* This single end is then applied to the second *tekuri.* The workman takes one end of the *batun* from the pot at his side and lays it on the hanging thread of this second *tekuri.* He then reels the wire and silk together by rubbing this *tekuri* smartly on the calf of his leg with the palm of his hand. He then lets go, with the result that both *tekuris* reel. Silk thus unwinds from the first *tekuri* and "*kálábatun*" is thus wound round the second *tekuri*, the workman, while the *tekuris* revolve, laying *batun* on the thread of the second



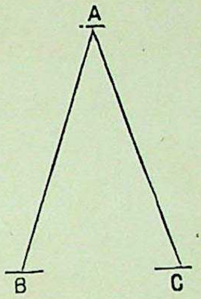
Kalabatun making: hand method. (*Page* 14.)



Kalabatun making; machine method.

(Page 15.)

tekuri. A small diagram will make the process clear, along with the photograph of the worker at his work.



A = iron ring through which the thread is passed.
B = *tekuri* on which the thread is wound.
C = *tekuri* to which one end of the thread is attached, and to which the workman applies the *batun.*

The *tekuri* C is twisted by the workman on his leg. On his letting go, *tekuris* B and C both revolve.

Much more silver *kálábatun* than gold is produced on account of the expense of the latter, and it is generally produced of a palish colour. The ordinary wages for this work are two annas a day, and some 600 yards can be produced in a day. This gold and silver thread is for the most part very well made, the metal and silk being fused in a most perfect manner.

Machine production.

The machine is of a tabular form. The lower portion of it consists of several large wheels; the upper portion of *phirkis* or spools, springs and *charkhis* or small reels. These are arranged horizontally above the big wheels, and in three parallel lines. On one side are the spools, in the middle are the springs, and on the other side are the reels. The number of spools and reels is identical, and one reel is exactly opposite each spool. The silk thread is reeled in each spool, and passes from them through the springs in the centre. The lower wheels are connected by strings with the upper portion of the contrivance, that is the reels, springs and spools. Thus when the wheels below are set in motion, the *phirkis*, springs, and *charkhis* all move, and the silk thread passes from the *phirki* through the springs to the *charkhis*. *Batun* is laid on at the springs by boys employed for that purpose. The prepared *kálábatun* is thus wound on to the *charkhis*. The whole contrivance is set in motion by turning a big wheel connected with the other wheels by leather belting. The labourer who sets the machine gets two or three annas a day, and the boys usually get one anna six pies.

The *kálábatun* trade is most flourishing in India at Ahmedabad. In these provinces the largest amount of *kálábatun* is prepared at Benares, where it is in great demand for the *kamkhwáb* work. But this particular industry has greatly declined in recent years, owing to the importation of foreign *kálábatun*; the decline has left clear traces on the income-tax returns of Benares.

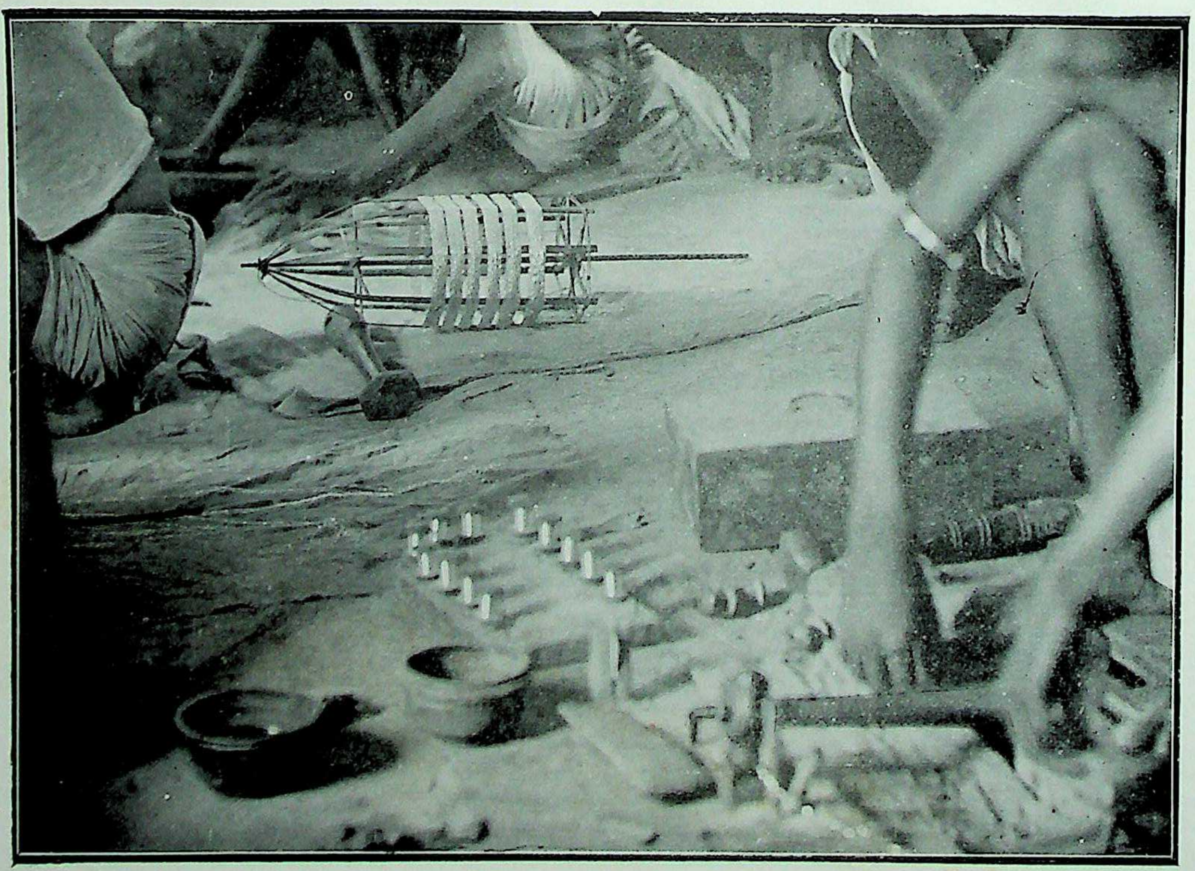
Salma and Sitara.

Salma and *sitára* are productions from the thin wire beaten out by the *tárkash* and the *tárdabkáya*, and are extensively used in *zardozi* work.

Salma.

Salma is wire curled in a spiral form: there are several varieties of it, varying in appearance and thickness. It is prepared by twisting *bádla*, i.e., thin flat wire on *tár*, i.e., thin round wire on a needle. It is afterwards taken off the needle, and the wire thus twisted is called *salma*. Thus in all *salma* a small hole is left within where the needle is taken out, after twisting, and the wire can be stretched out from the spiral into a straight form, but in embroidery work it is always used thus coiled up. The work of *salma* making is chiefly done by *pardahnashin* women. It is light work and of a sort that can be done by such women without any loss of self-respect. This fact, however, causes some difficulty to the English enquirer who desires to see how the work is done. But I have seen the work done by men in Benares, and it is as follows:—A needle (*sui*) long, fine and of spring steel is fixed into a kind of clamp. The point is passed through a wooden upright and the other end covered with a kind of wax, passes through another upright, and is then fixed in the axle of a lathe. A *másha* or reel of wire is attached to a perpendicular pin fitted on to a large wooden stand known as a *kunda* and described in connection with *bádla* making. The end of the wire is brought to the steel needle and twisted round it till it gets a grip, first passing through a *chip* or metal stand with a bamboo stick standing upright and slit in the middle. The object of this is to keep the wire straight on its way from the *másha* to the steel needle. The wheel is then turned with the hand and as it turns the needle revolves and winds the wire round itself. The wire is guarded by the other hand. As the needle fills, the wire having assumed a

Method of work.



Salma making.

(*Page* 16.)

spiral shape, falls over the point into the lap of the worker. The size of the needle depends entirely on the kind of *salma* it is desired to produce. There are no less than five varieties. They are called by different names in different districts. Though there is a local difference of terminology, there appears to be no difference in the thing itself.

As the needle varies according to the kind of *salma* it is desired to produce, so also does the wire: for some *salma* the round wire (*tár*) is used, for other kinds, the flat wire produced by the *tárdabkáya* both in the form of *bádla* and of *batun*.

Kinds of salma.

The kinds of *salma* are—

(1) *Khárdár* or *chaupahal ká khárdár.*—This is coarser than ordinary *salma*, and is wound round a four-sided needle with the result that, as its name *chaupahal* implies, it is four-sided. The needle used is a fairly thick one.

(2) *Motiya.*—This is made of round thin wire (*tár*) and is closely twisted on a very fine needle, so that the *salma* in this stage is very thin, and closely coiled.

(3) *Dabka huá salma.*—This differs from *motiya*, in that it is made of flat wire, and is wound round a thicker needle, so that the wire itself is somewhat thicker than *motiya* and not quite so closely coiled.

(4) *Kora.*—This is made of very thin round wire, thinner even than that used in *motiya*. It is twisted round a thicker needle. On the other hand it is wound round the needle wire more closely, so that, though its circumference is greater than that of *motiya*, it has the appearance of finer workmanship.

(5) *Bhogli.*—This is made of flat wire and is twisted round a very thick needle. It is not unlike *khárdár* at first sight, but *khárdár* is four-sided, whereas *bhogli* is round. The diameter of it in the specimens I have seen must be about one-tenth of an inch.

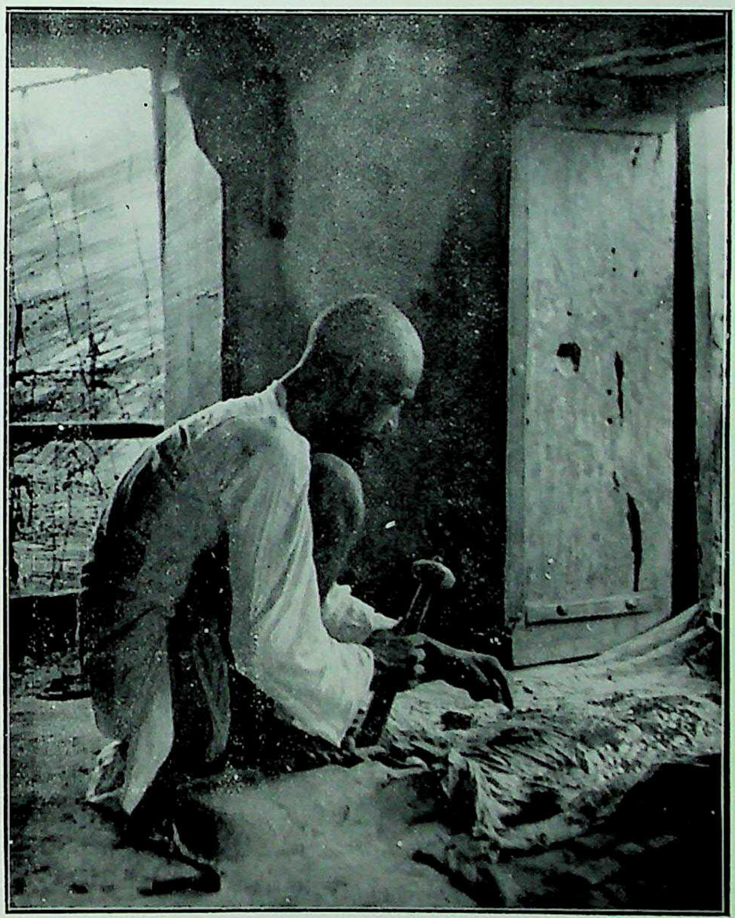
In Dr. Hoey's monograph on the manufactures of Northern India the names given are *landani* and *aflait* for *khárdár* and *motiya:* and in Mr. Charles's monograph on gold and silver work *chaupahal* and *gijai*. But the word *landani* does not appear to be in general use. These various kinds of *salma* are all used in embroidery work, *zardozí* and *kámdání*, and will be described in that connection. The wages of the artisans employed in *salma* making are said to be at the rate of three and a half annas per *tola*

Sitara.

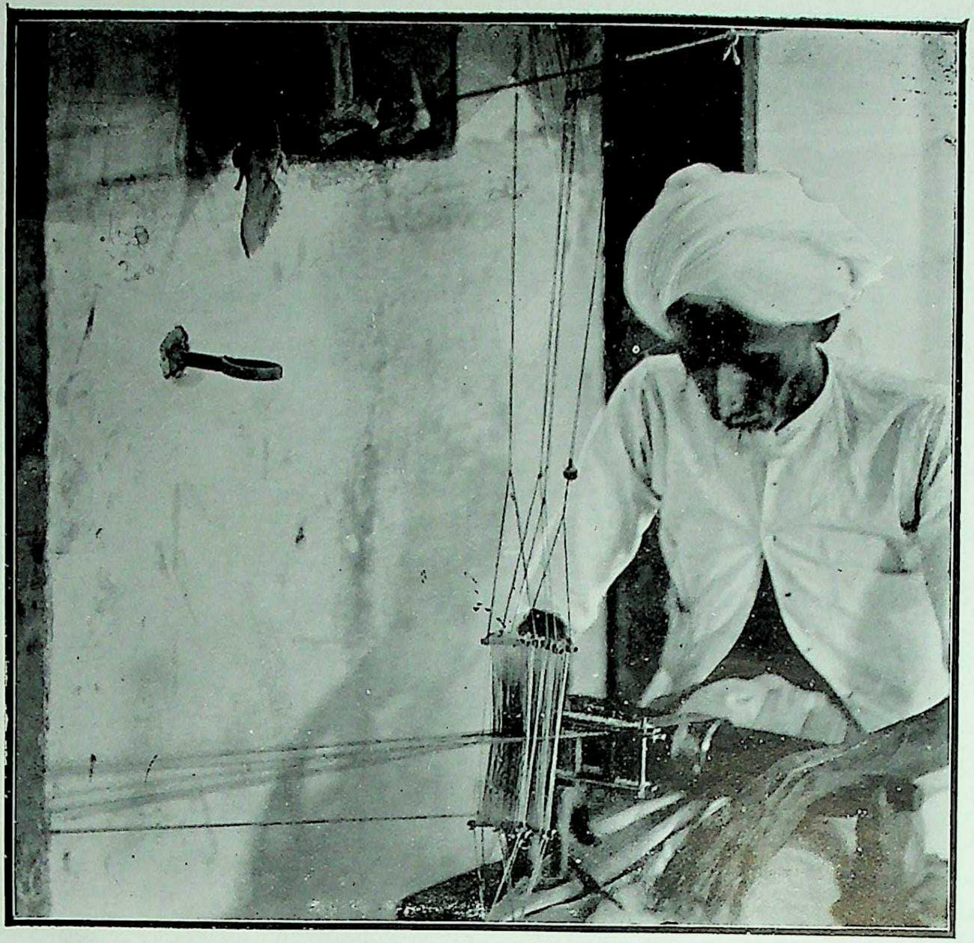
Sitára is the name given to the small "stars and spangles" used in *zardozí* work. The workman takes a coil of *salma* wire, cuts right down it with a sharp pair of scissors, so that little rings of wire fall down singly in a shower, each twist in the spiral shaped wire becoming a separate ring. These rings are then collected on to a rod known as a *salai*, like a long thick needle. The workman holds this in his left hand, in his right is a hammer. In front of him is a wooden anvil known as a *kunda*, on which is fixed a flat plate of polished steel called a *nehai*. The whole contrivance is exactly like that described in connection with the *tárdabkáya*. Round this anvil a piece of cloth is fastened, being attached by pegs fixed in the ground, and dipping in the centre so as to form a kind of trough. The end of the needle is held depressed by the artisan, and as he lets the rings of wire fall on to the *nehai* one by one, he gives them a light tap with his hammer. The metal thus beaten falls off into the cloth, having become flattened out into the form of a spangle. Another name *chamki* is also given to these spangles. There is a difference between them, however, *chamki* being smaller than *sitára*, that is beaten from finer *salma*. *Sitára* and *chamki* are quite flat with a small hole in the middle. But in embroidery work a cup-like spangle like *sitára*, but not flat, is often used. This is called a *katori* and might be made by hammering a very small piece of metal into shape on a *kangula*. But this process would be very laborious and in point of fact the *katoris* seen here are machine-made and are imported from Surat and Bombay. The *katori* is also sometimes known as *tikuli*. But this *tikuli* should not be compared with the *tikuli* worn by females in the centre of the forehead. For such *tikuli* the wire described in this monograph is not used. The wages for preparing *sitára* from genuine gold and silver wire are one and a half annas per *tola*, and several *tolas* can be turned out in a day. But in the case of imitation gold and silver wire the wages are considerably less, only half an anna per *tola* being paid. It need hardly be said that the demand for imitation work is greater than that for the genuine article, as gilded brightness is an essential on every bridal garment worn by poor as well as rich.

The uses of wire.

All the processes in which the metal is treated by itself have now been described. The *gota* weaver, the *zardozí* worker and the *kamkhwáb* weaver has now all that he requires, as far as wire in its various forms is concerned. But any monograph on *Wire and Tinsel* would be



Sitara making. (*Page* 18.)



Gota weaving. (*Page* 19.)

incomplete without some account of these further processes, at any rate in so far as wire, wire thread, or wire beaten into stars and spangles is used in them. Each of the industries—if one may so call them—above described is complete in itself, but they only exist because they provide the necessary material for the production of those articles—sometimes of clothing, sometimes of works of art—which are seen in the meanest bazar, in the palaces and on the persons of rajas, and in the collections of European travellers. The Indian loves what to our more sober taste appear somewhat meretricious adornments. In the things he wears and the things he sets around him he likes to see richness personified in gold and silver if he is wealthy, and what glitters like gold and silver if he is not. For this reason—in spite of the decline of recent years—gold and silver lace, brocades and embroideries (now unfortunately marred by aniline dyes and European taste) are lavishly produced. In all of these articles an extensive use of wire and wire thread is made; I therefore now propose to deal with this branch of industry, in so far as wire in one form or another is employed. I begin with *gota weaving* and *lais making*. The *gota* weaver uses *bádla* (flat wire) and silk or cotton thread. He takes the *bádla* by weight from the *gotawala* and himself supplies the thread of which the warp is made, the *bádla* being the weft. The whole *bádla* is taken out of a *charkhi* (reel) and then spun into an *adda* or stand. The *bádla* is made to pass out from this stand by means of a small thin piece of stick called *laccha* or *saria*. The *bádla* is then put in a *gulla* or heddle which stands on the *sáz* and is passed through a *phanni*. The process is known as *sara jana*. The weaver sits at his work on a piece of wood like a bench known as a *part* and uses an instrument called a *kánta* to do the weaving, which for the rest is weaving of a most simple character and need not be described in this monograph, as it has been done so several times in others. As the weaving goes on the prepared *gota* passes on to a piece of round wood called a *turia* or *tur*. *Gota* varies considerably in width, and the number of *bádla* strings used as weft depends on the width of the *gota* it is desired to produce. It is made both of gold wire and silver wire and imitation gold and silver wire. If gold or imitation gold *gota* is to be produced, yellow silk is used, if silver or imitation silver *gota*, white silk is used as warp. Several qualities of *gota* are made, the cheapest imitation quality generally being trussed up with paper so as to give it

Gota weaving.

Extensive use of gota.

a certain appearance and some degree of fixity. The use of *gota* is extremely common, particularly in the production of garlands or *hár* making. All officials in India are familiar with the garlands presented to them by Indian hosts at all ceremonies, whether of a public nature or merely of private hospitality. Everywhere, in any bazar of any city, masses of *gota* are displayed hanging up in bundles. Large quantities of it are required for goods for the exclusively Indian market, such as saddle cloths, pillow covers, *masnad taqiyas, pardahs*, elephant housings, harness for ponies, bed covers, *punkahs*, *topis*, shoes, *angarkhas*, *sáris*, *dupattas* and in short for almost every article of apparel. Seeing that the demand comes from the poorest as well as from the richest it is not surprising that a vast amount of imitation *gota* is produced.

Varieties of gota.

There are many varieties of it according to the use to which it is put. Ordinary *gota* is about half an inch wide and a variety of this sort known as *dhanuk* is about one-fourth of an inch wide. This is the kind most commonly seen in the bazars and most widely used in *hár* making. *Gota* of this width but of a different kind is also produced. It is known as *chutki* and *gokhru*. This variety is made from *bádla* which has already been worked up into the form of a chain, and then woven in the usual way with silk. Such *gota* fetches a slight advance in price and is used for more fancy trimmings. It is made chiefly to embroider *sáris* or females' *dhotis*, but it is also used in *zardozí* work. *Kinári* is *gota* about two or three inches wide, and is used as its name implies for trimming the borders of various garments.

Pattha is very broad *gota* up to eight inches. It is sometimes plain, and sometimes done in a chain pattern. Another variety of this is called *anchal*, it is very wide but not plain, and is used in trimming females' *sáris*. It has generally been stamped so that this broad *gota* is marked with flowers or water or other patterns. This is called *attusazi* and the dies are called *thappas*, and are made of wood. The design is impressed in the *gota* by the workman striking the die with a hammer. But this process of stamping is not confined exclusively to the broad varieties of *gota*, but is also employed in rendering *gota* of the ordinary width more pleasing to the female eye.

Lais.

The process of lace weaving *(lais)* is very similar to that of *gota* weaving. The difference is that *kálábatun* (gold or silver thread) is used as weft, instead of, or often as well as *bádla*, with a warp of silk. There are many varieties of lace of which the following are the chief:—

Kinds of lais.

Bákri.—This is made of *bádla* and *kálábatun* and is about one-fourth of an inch wide. It has a border of gold wire (*bádla* and *kálábatun*) attached in a circular pattern. Not unlike *bákri* is *patri,* also known as *siva;* it is about the same width as *bákri,* and has a border of *bádla* or *kálábatun;* but instead of being of a circular shape, it is attached diagonally. *Champa* is lace made of *bádla* in silver or gold with narrow *gota,* and having *katoris* or tiny cups of metal like reversed *sitára* sewn on. It has also a scollopped edge. It is used for trimming *dopattas* and also as a variation of the ordinary plain *gota.*

Jhálar or *kinri* is used for trimming "*mudákhil,*" the embroidery stitched on the back, front, sleeves, collar of the coats worn by prostitutes and children. *Jhálar* is of a very elaborate appearance, and to European taste appears tawdry, but it is a fitting adornment for those ladies who wear it. The lace itself in this is about half an inch wide or a trifle more. It is thinly woven of *bádla* and *kálábatun*: attached to the lace are pearls, or more commonly glass beads, arranged diagonally and strung with *salma,* to which again is added a border of tassels of gold thread caught up with coloured glass or precious stones.

Kaitun is thin gold lace, rather like a boot lace, and of about the same width. It is used to trim the sleeves of uniforms, and is used in the tassels of the *pagris* of sub-inspectors of police.

Kangam is brocade-like lace, and *paimuk* is just the opposite, being very narrow without any curly border and woven simply of *kálábatun* and *bádla.*

These various kinds of lace are most extensively employed for trimming and the broader varieties woven of gold *bádla,* gold *kálábatun* and silk have a large sale among European ladies who use this lace for trimming dresses, making belt lengths and in a thousand other ways in which woman can turn a pretty thing to some advantage.

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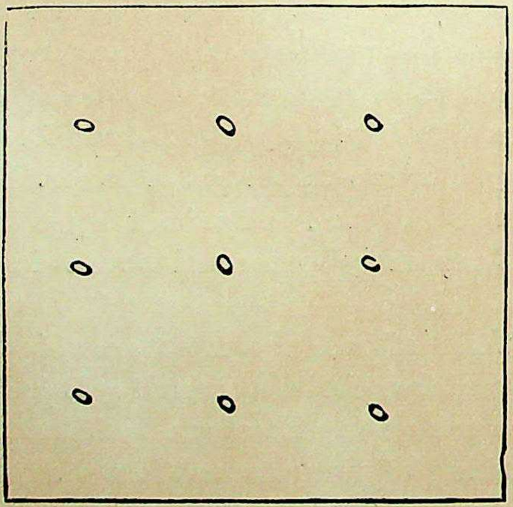
Kamdani work distinguished from zardozi.

I pass on to *kámdání* work which with the uninitiated is often confused with *zardozí.* Dr. Hoey says the essential difference is that while *kámdání* work is done with gold and silver wire or thread (*tár*) *zardozí* is done with *salma* and *sitára.* But this is not the distinction between the two kinds of work recognized by the Indian merchants themselves. For example in the *kámdání* work produced at Bareilly both *salma* and *sitára* are used.

In *zardozí* more varieties of wire products than *salma* or *sitára* are employed, while *kámdání* is not absolutely limited to the use of gold or silver wire only (*tár* or *bádla*). The essential difference according to the leading merchant of Benares is that in *zardozí* work the gold or silver wire and wire products are sewn on the material with silk, whereas in *kámdání* work, strictly speaking, no silk is employed, but the wire is inserted into the material on which the pattern is to be made. It is threaded through the silk or whatever the ground may be, and beaten straight on the reverse side, the result being that both sides are equally presentable. Besides this difference, in *zardozí* work a picture or at least a clear design is represented, and the background of silk is almost obscured by the gold and silver wire and spangles cunningly wrought into various patterns. In *kámdání* work there are simply as it were blobs of gold and silver dotted about here and there on the silk cloth, in some plain geometrical combination. There is no pattern strictly so called, no artistic skill is required either in conception or in execution. Its appearance is as follows :—

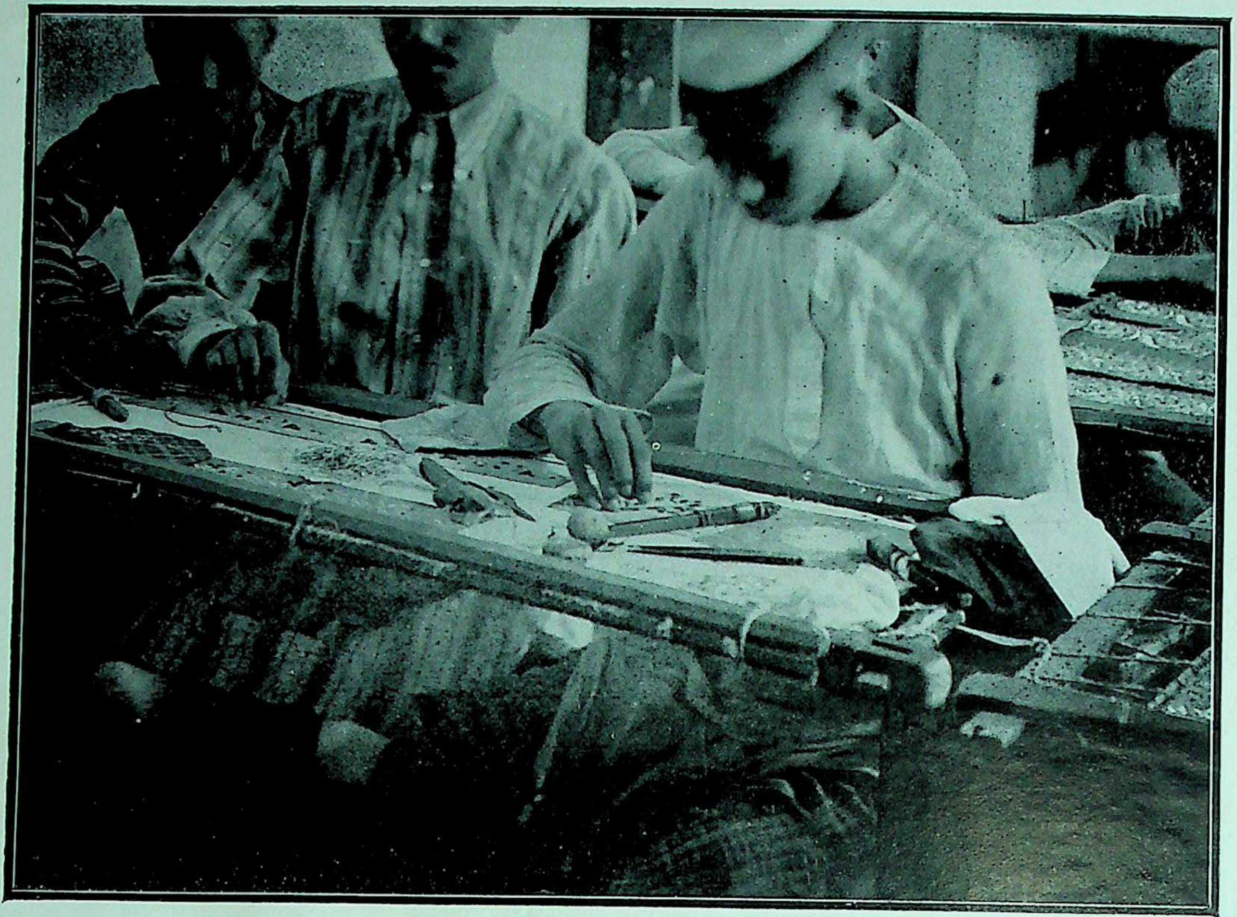
Appearance of work.



The material used as ground is generally *tanzeb*, *makmal*, *chikan*, *jámdání*, *jali*, or other fabrics of an open texture, but silk of various tints is also very largely used as the background.

Bastard kamdani.

Although in *kámdání* work, strictly speaking, no silk is used for sewing, there is a kind of bastard *kámdání* in which silk thread is used to sew on the gold and silver wire. It cannot be called *zardozí* because in every other way it has the appearance of *kámdání*. The 'design' of the *zardozí* work is lacking, but stars and spangles will be found on it in



The Zardoz at work. (*Page* 23.)

addition to the blobs of gold or silver wire, and all will be sewn on. It possibly represents a slight combination of both kinds of work. If no sewing silk were used, there could be no *sitára* (or spangles). But spangles accentuate the brilliance of these articles and therefore are sometimes added to *kámdání* work to produce a more lively effect.

Dupattas, bridal garments, and *sáris* are the commonest articles of general use turned out in this kind of work. An exhaustive account of such articles will be found in Mr. Yusuf Ali's Monograph on Silk Fabrics. The work is easy to do and is done by *darzis.* The beauty of this kind of work is mainly derived from the background of silk, the shades of which are often very pleasing. The gold and silver 'blobs' do not add to but rather detract from the artistic effect: but they provide a considerable increase in costliness and articles so decorated are in great demand.

Zardozi work.

I now turn to *zardozí* work, the essential difference between which and *kámdání* has been explained above. But there is in reality no reason why the two kinds of work should ever be confused, for *zardozí* is infinitely more costly, more elegant and more artistic. In *kámdání* the pattern, if pattern it can be called, is purely geometrical, whereas in *zardozí* there is a design, which may at times be beautiful, prepared by skilled draughtsmen who are kept by the leading merchants for this purpose alone. In the best *zardozí* work only the purest wire is used, the pattern being worked out in *kálábatun*, *bádla*, *salma* and *sitára*, although in some of the most beautiful *zardozí* work, as for instance the pictures of the Taj Mahal done at Agra, the use of *sitára* has been discarded. But there is too a wide manufacture of inferior *zardozí* in which wire of a poor quality is used and in which there is little or no design.

Method of work.

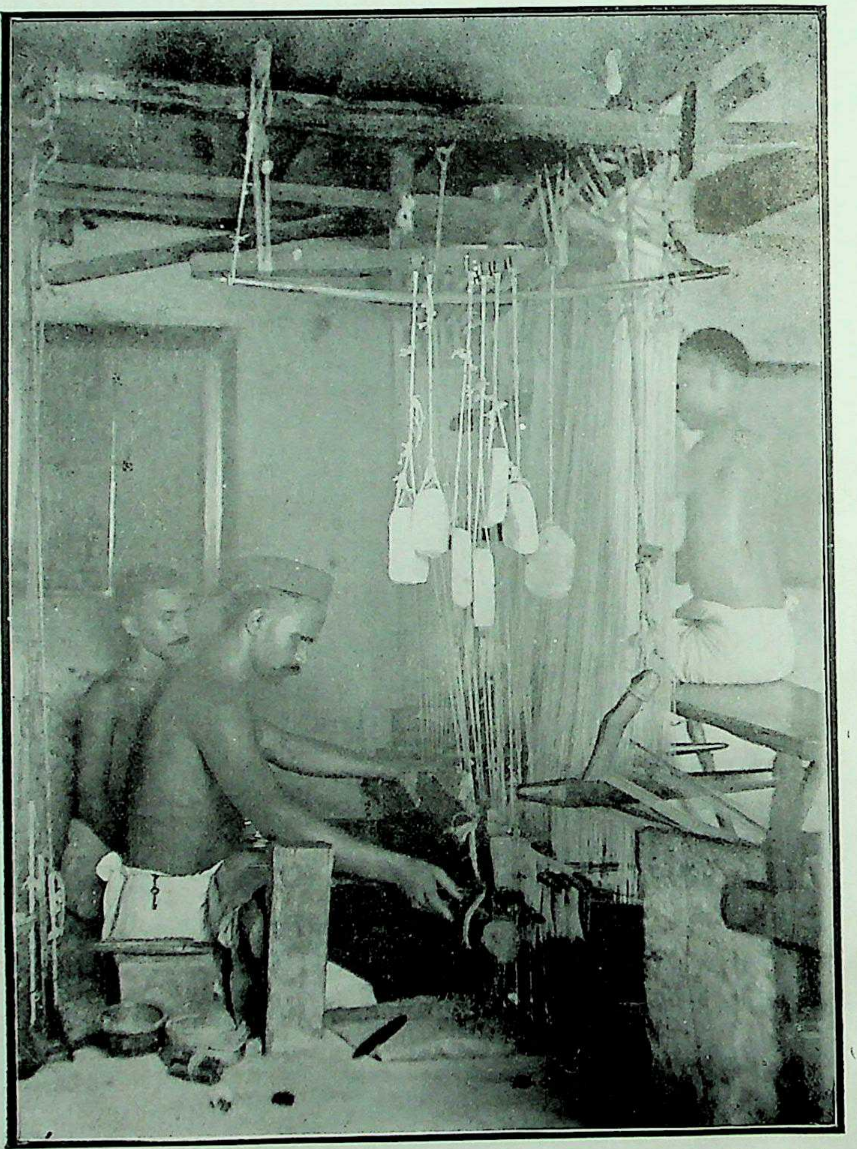
The process of work is easy, and is done by *darzis*, who sew on to the material with silk the wires used for preparing the pattern. These patterns have been previously designed by an 'artist' kept for that purpose. The usual design is some famous building, such as the Taj Mahal, some local temple, episode of the chase, fish, animals, birds, especially the peacock; sometimes the design is merely geometrical. A book of them is kept by the merchant who selects a suitable pattern, and has the work taken in hand: but embroidery of great costliness is only done to special order. The pattern thus selected is drawn or stamped on to the 'ground' on which the embroidery is to be done. A piece of canvas or *nainsukh* or *márkin* is sewn tightly to the four sides of a frame, which is slightly raised from the ground on pegs. It is only slightly raised in order to accommodate the Indian custom of working cross-legged. This frame is called a *karchob*, and the base of inferior cloth *astar*. On this base the velvet, satin, silk or whatever 'ground' is used is tacked. The design has of course already been traced upon it, and the flowers, etc., may have been worked over with silk first. The embroidery proper is then begun, the *salma*, *sitára*, *kálábatun* and *bádla* being stitched on by *darzis* with silk. The wire is cut into lengths appropriate for the pattern in hand. The appropriate kinds of wire as above described are also used according to the needs. Considerably high wages may be earned, as much as 8 annas or even one rupee being quite a possible amount.

Extensiveness of use.

Zardozí work is found in almost every description of wearing apparel, particularly caps, shoes, and in numerous objects of ornamentation; some kinds of *zardozí* work have special names, such as *bel*, which is trimming for ladies' dresses. It is worked on satin cloth, and doubtless derives its name from the *bel* flower. The design is naturally floral. Or again *mudákhil*, or embroidery for coats, waistcoats and prostitute's garments. It is generally done on a ground of velvet, and is used as shoulder straps, sleeve trimming, and on the back and front of coats. Young boys often wear this, but it is principally affected by prostitutes, in which case the *zardozí* work, pure and simple, is made more elaborate by the addition of glass or precious stones. For the rest *zardozí* work is largely used in trimming for ladies' dresses, on various 'grounds' but generally on white satin: for embroidery of every kind, both for use and show, for coats, waistcoats, shoes, *topis*, table centres, purses, table cloths, *pardahs*, cosies and many other things too numerous to enumerate.

Artistic aspect.

From the artistic point of view some of the designs may perhaps appear beautiful, and the majority are not lacking in talent. But it is difficult to put the proper artistic value on work of this sort and to many Western observers the words beautiful or even artistic would seem out of place in describing Indian embroideries, and words such as costly or luxurious would be deemed more appropriate. But from the Indian point of view they are undoubtedly beautiful. For articles of dress such embroidered work is not subdued enough for Europeans, and as ornaments, there is rarely anything in the designs, to the Western mind, beyond talent, skill of hand, and accuracy of line. There



Kamkhwab weaving. (*Page* 25.)

seems to be no attempt to get at the ideal. But the Indian artistic values and standards differ from ours to such an extent that any further discussion of the artistic aspect of the work can only lead to further generalities eminently unsuited to a monograph.

Kamkhwabs: Importance of kamkhwab weaving in Benares.

In any account of wire and tinsel mention of the *kamkhwáb* work of Benares cannot be omitted. It is true that gold and silver wire as such is not used, but *kálábatun* is as essential as silk in the weaving of these brocades. A large number of workmen are employed. The recently published Gazetteer of Benares gives the number at 2,000. These silk workers are of course not included in the estimate of number of artisans employed in wire work given above. The majority of these are Muhammadans (Julahas), but Kunbis, Ahirs, Rajputs and others who have learnt the work are also employed. The wire workers are drawn from much the same castes. Though there is no trade guild or union as there would be in England, there is no lack of a certain trade discipline and there are customary understandings which are recognized as more or less binding. I do not propose to give an exhaustive description of weaving, especially as this has already been done and set on record by Dr. Hoey and Mr. Yusuf Ali, but merely to describe the process in so far as gold thread is concerned. The loom for weaving *kamkhwábs* is fairly elaborate, and represents a close approach to the use of machinery, except that the Indian worker does his work without any unworthy thoughts of time being money and with an absence of hustle never seen in European factories. This weaving is complex because often a most elaborate pattern has to be produced. The *kamkhwáb* weaver sits on a low bench of wood called a *patia*. Four *khuntas* are adjusted to the ground, two quite close to the weaver on either side of him and two a little further off in front of him. Between the sets of *khuntas* a round piece of wood is fixed called *turia*. The silk threads (*tána*) already spun and coloured are laid out between these two *turias;* one end of this silk is fastened to one *turia* close to the weaver and the other to the *turia* placed at a little distance away. Several '*gullas*' or heddles are placed on the *tána* of silk: these hang from the ceiling by strings. They pass through the *tána*, and reach the ground, where they are connected with the instrument called '*dam*,' i.e., a piece of wood worked by the weaver's foot. By exerting pressure on this, one *gulla* goes up and the other comes down. Meanwhile while the process worked from below is going

Method of work.

on the weaver draws *kálábatun* across the *tána* at right angles to it. The *kálábatun* is kept in an instrument known as a *dhenki*, a kind of spool. Inside this there is a small *chhuchhi* or *sirki*, a kind of reel in which the *kálábatun* is wound. In front of the *gulla* hanging on the *tána* a piece of wood is placed called *katha* with which the *kálábatun* is tightly pushed against the *tána*. This weaving cannot be done by one man alone. But between the two *turias* another man sits whose duty it is to raise the silk threads according to the *naqsha*, or pattern, with a wooden instrument called a *mandha*. This is a forked instrument which enables the worker to pick up the exact number of the threads of the warp.

Designs.

The weaver works according to a pattern which has been prepared by the *naqshaband* or designer and approved by the manufacturer. A little model of this made in a frame work is hung up at a short distance from the principal weaver who carefully follows the pattern, and sees that the pattern is followed. The designs are at present generally worked out on paper and not as formerly on talc.

Benares is famous for the accuracy and richness of its designs, but few new ones are attempted. They are for the most part floral or geometrical in character, as their technical names indicate. Mr. Yusuf Ali has given a very full account of these patterns with their technical names on pages 57 to 65 of his Monograph on Silk Fabrics.

The method by which the various instruments above described became component parts of the loom, by means of bamboos fixed in the ceiling and other arrangements, has been carefully gone into by Mr. Yusuf Ali on page 52 of the same monograph and need not be repeated here. All that need be said about the actual weaving of *kamkhwábs* has been said. The work requires a considerable degree of skill and the fabrics and brocades produced by the leading merchants are very costly and are naturally only made to order. The workman gets fair wages: and behind his apparent indifference and easy-goingness there lies a considerable pride in good workmanship.

Artistic aspect.

As to *kamkhwábs* historians and artists have not been lacking in enthusiasm. "These marvellously woven tissues and sumptuously wrought apparel have been immemorial glories of India. The Indians continually display an admirable skill in the arrangement of forms and colours producing those beautiful and harmonious combinations which are to the eye what chords in music are to the ear. The subdued elegance which characterizes Indian decorations never fails to please.

It marks a pure and refined taste and whether it be the result of cultivation or of instinct it certainly exhibits a charming obedience to the great principles of art. Of the variety and beauty of the patterns produced in the Indian looms by combinations of silk, gold and silver, only a faint idea can be obtained without very complete illustrations."

Conclusion.

This somewhat rhetorical quotation expresses in the language of hyperbole the best side of Indian art. But the other side must not be overlooked. There is no progress in originality of design, and other causes of decline which have already been touched upon are at work. Mr. Chatterji has indicated how an improvement may be brought about. The Indian himself believes that much good can be done by the establishment of a central technical school with a special department for training in designs, and much is expected from the school which it is hoped will be established in Benares.

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